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MEMORANDUM

То:	Genene Lehotsky and Christine Rothman - City of San Diego Transportation
	and Storm Water Department
From:	Jake Marcon, Chris Oesch, and Vipul Joshi – Dudek
Subject:	Smythe Channel Proposed Off-Site Mitigation in the Tijuana River Valley
Date:	June 2, 2016
cc:	Mike Sweesy – Dudek
Attachments:	Figures 1–4
	Attachment A – Draft ACOE Mitigation Ratio Setting Checklist
	Attachment B – Wetland Data Determination Forms

This memo presents the findings of a jurisdictional delineation and mitigation assessment conducted by Dudek staff on May 5, 2016, for off-site mitigation of jurisdictional impacts associated with channel maintenance of Smythe Channel (Map 130). An approximately 8.3-acre site in the Tijuana River Valley was identified by Dudek staff, and a field visit was conducted with City of San Diego Transportation & Storm Water Department staff and San Diego Regional Water Quality Control Board (RWQCB) staff on April 28, 2016 (Figures 1 and 2).

The site provides opportunities for rehabilitation and enhancement, and is potentially suitable as mitigation for multiple project sites, in addition to mitigation for Smythe Channel maintenance. The City of San Diego (City) has a Memorandum for the Record (MFR) with the U.S. Army Corps of Engineers (ACOE) for Advanced-Permittee Responsible Mitigation for City of San Diego Essential Public Projects (ACOE 2015). The Smythe Channel mitigation project would likely fall under this MFR.

Based on the jurisdictional delineation, evaluation of potential mitigation areas on site, and using methods discussed with City and RWQCB staff, Dudek estimates that the site would support 1.4 acres of rehabilitation and 4.0 acres of enhancement within the total 8.3-acre area (Figures 3 and 4). At the request of ACOE, Dudek prepared a draft of the ACOE Mitigation Ratio Setting Checklist for the Smythe Channel (Attachment A).

METHODS

On May 5, 2016, Dudek Habitat Restoration Specialist/Biologist Jake Marcon and Biologist Monique O'Connor investigated the proposed off-site mitigation area. Evaluation of the proposed mitigation site included a jurisdictional assessment and an analysis of invasive species cover. ACOE has jurisdiction over a wide floodplain of riparian habitat between existing levees in areas adjacent to the mitigation site (Figure 3). For this reason, ACOE jurisdiction was largely assumed to encompass the entire mitigation site.

PROJECT LOCATION

The proposed mitigation site consists of 8.3 acres of disturbed, mature southern willow riparian forest bordered by the Pilot Channel on the north, County of San Diego lands on the east (and a continuation of the disturbed southern willow riparian forest), a flood control berm and agricultural land on the south, and the previously completed Tijuana River Emergency Channel Mitigation Site and additional disturbed southern willow riparian forest on the west. The proposed mitigation site is located entirely on land owned by the City's Public Utilities Department and is located within the City of San Diego within the Coastal Overlay Zone.

Observed conditions on site included drainage patterns in the soil and wracking, abundant soil moisture, depauperate herbaceous and shrub layers, and a mature southern willow riparian forest canopy. Castor bean (*Ricinus communis*) is the most abundant non-native invasive plant species, both by number of individuals and by coverage, with giant reed (*Arundo donax*) also present. Castor bean inhabits the upper shrub and lower canopy layers, ranging from approximately 4 to 25 feet in height. From an aerial perspective, the majority of the castor bean layer is not visible on a map, as it is covered by the southern willow riparian forest canopy layer. Given the age and stature of the willow canopy, significant deadwood litter is present, covering the mineral soil in many places.

JURISDICATIONAL DELINEATION RESULTS

A formal ACOE jurisdictional wetland delineation was conducted within the mitigation site in accordance with the ACOE *Manual for the Delineation of Wetlands* (ACOE 1987) and the ACOE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (ACOE 2008). Hydrology, vegetation, and soils were examined at three data stations within the site (Figure 4). The proposed mitigation site lies entirely within the riparian floodplain, meaning that each data station is within the same landform. As noted in the wetland determination data forms (Attachment B), the site was determined to contain wetlands as defined by ACOE.

Hydrology

The geomorphology of the site is a wide riparian floodplain. Wetland hydrology indicators were observed at all data stations, including drift deposits, drainage patterns, watermarks, sediment deposits, and a positive facultative (FAC) neutral test. The riparian floodplain contains significant microtopography and visible drainage patterns throughout. Small to moderately sized trash and debris were commonly seen in drift deposits, and likely frequently wash down from upstream. The size of the material indicates that the floodplain receives periodic large flood events.

Vegetation

Hydrophytic vegetation included black willow (*Salix goodingii*), arroyo willow (*Salix lasiolepis*), saltcedar (*Tamarix ramosissima*), mulefat (*Baccharis salicifolia*), and giant reed. Data station one (DS1) was considered problematic for vegetation due to the predominance of castor bean (facultative upland [FACU]), but contained hydric soils and wetland hydrology indicators. For that data station, hydrophytic vegetation was assumed based on consideration of the current condition as a problem area due to invasive species infestation. Invasive species were common throughout the mitigation site.

Soils

Soil pits were dug at the three data stations, shown in Figure 3, to observe soil conditions and determine if hydric soils were present. The proposed mitigation site is entirely within the riparian floodplain, so all soil pits were dug within the same landform. Soil pits were dug at data station one (DS1) and two (DS2) in soil mapped as Chino silt loam, saline, 0-2% slopes. The soil pit at data station three (DS3) was dug in soil mapped as Tujunga sand, 0-5% slope (per Munsell 2000). All data stations were found to have hydric soils (Attachment A).

PROPOSED RESTORATION AREAS

Restoration potential was assessed during the field survey and mapped using GPS equipment with sub-meter accuracy. Additional analysis involved final delineation of selected polygons through aerial interpretation using ArcGIS software. The approximate cover of invasive species was mapped throughout the site as an average for each delineated polygon. The proposed restoration areas, as shown in Figure 4, are adjacent to an existing mitigation site, which would provide enhanced functions and services by providing additional, contiguous habitat acreage (Figure 3). A 15 foot wide buffer was set along the existing equestrian trail where no credits will be pursued. The mitigation project is estimated to provide 1.4 acres of rehabilitation and 4.0 acres of enhancement.

Rehabilitation

Areas within the proposed mitigation site that contained 80% cover of invasive species or more and 0-10% native canopy cover were mapped as rehabilitation areas. These areas total 1.4 acres and are distributed throughout the site (Figure 4). The majority of these areas were monotypic stands of either castor bean or giant reed. Additional rehabilitation areas, though few, contain fig (*Ficus carica*) and eucalyptus (*Eucalyptus camaldulensis*) canopies.

Enhancement

Much of the proposed mitigation site contains significant invasive cover in the understory, but retains a native canopy of black willow. Polygons were created to classify the average approximate cover of invasive species in the understory (Figure 4). Enhancement areas were identified over 6.8 acres of the site. Based on the estimated percent cover of invasive species, 4.0 acres of invasive species cover would be removed. The majority of the proposed mitigation site was mapped to contain 60% cover or greater of invasive species in the understory. In areas where invasive cover in the understory was less, little biodiversity of native species was observed. Invasive species cover was generally less along the western edge of the proposed mitigation site, likely due to adjacency to the existing mitigation area.

Native Areas

Relatively little of the proposed mitigation site contains native areas, mapped as containing less than 20% understory cover of invasive species (0.1 acre). Native areas consist mostly of willows (black and arroyo) with little understory vegetation.

OVERVIEW OF RESTORATION APPROACH

The mitigation strategy for this site would include removal and control of invasive plant species through physical and chemical means. In addition, excess deadwood and organic litter would be removed, as needed, to provide additional exposed soil surface area for planting and seeding with native species. The open dirt area south of the proposed mitigation site could be used as a staging area, pending authorization from the County of San Diego (the landowner). Once the site is prepared, it would be planted and seeded with appropriate native riparian species such as yerba mansa (*Anemopsis californica*), spiny rush (*Juncus acutus ssp. leopoldii*), arroweed (*Pluchea sericea*), black elderberry (*Sambucus nigra* L. ssp. *caerulea*), mulefat, and mugwort (*Artemisia douglasiana*). No supplemental irrigation is anticipated to be needed, as soil moisture appears to be suitable to support plantings at current elevations and topography. However, irrigation may be required as an adaptive management option if sufficient soil moisture is not present during the grow-in period of the target vegetation.

Mitigation strategies outlined herein do not include installation of additional plant material of willow (*Salix* spp.), sycamore (*Platanus racemosa*), cottonwood (*Populus fremontii*), or other common riparian trees associated with typical southern willow riparian forests and scrub due to the infestation of the surrounding riparian corridor by polyphagous shot hole borer (*Euwallacea* sp.). Per guidance by the U.S. Fish and Wildlife Service under consultation with the University of California Riverside Department of Plant Pathology and Microbiology, it is not recommended to add plants that are preferred species for hosting by polyphagous shot hole borer to the area. Due to these specific circumstances, mitigation planting strategies proposed herein differ somewhat from traditional mitigation approaches.

A 5-year maintenance and monitoring period would coincide with the installation of native plant material within the site. Monitoring would assess the health and viability of the installed vegetation and provide supervision concerning long-term restoration of the site during the critical establishment period. Invasive weed intrusions and other maintenance needs would be noted and addressed by a maintenance contractor. Maintenance, performed by a qualified native habitat restoration contractor, would include plant replacement and supplemental seeding, as identified during monitoring events, and could possibly include minor recontouring should a major storm event affect the long-term success of the mitigation site.

DRAFT MITIGATION RATIO SETTING CHECKLIST

Dudek completed a draft of the Mitigation Ratio Setting Checklist for the impacts permitted under Regional General Permit 63 authorization for maintenance of Smythe Channel (Map 130) (SPL-2015-00942-RAG). The draft supports requiring an overall 2:1 mitigation-to-impact ratio, with a 1:1 component of rehabilitation (0.59 acre) and a 1:1 component of enhancement (0.59 acre), for a total of 1.18 acres of mitigation. This is based on qualitative evaluation of the functional losses at the impact site and the functional gains at the mitigation site, with further consideration of risk/uncertainty and temporal loss. The RGP 63 authorization includes Condition #4, which states that "mitigation credits at a Corps-approved mitigation bank [are required] at a minimum 3:1 ratio." Corps-approved mitigation banks at the time of the authorization accounts for this geographic distance. The proposed mitigation site is within the same watershed as the Smythe Channel maintenance project, and is highly proximate to the impacts.

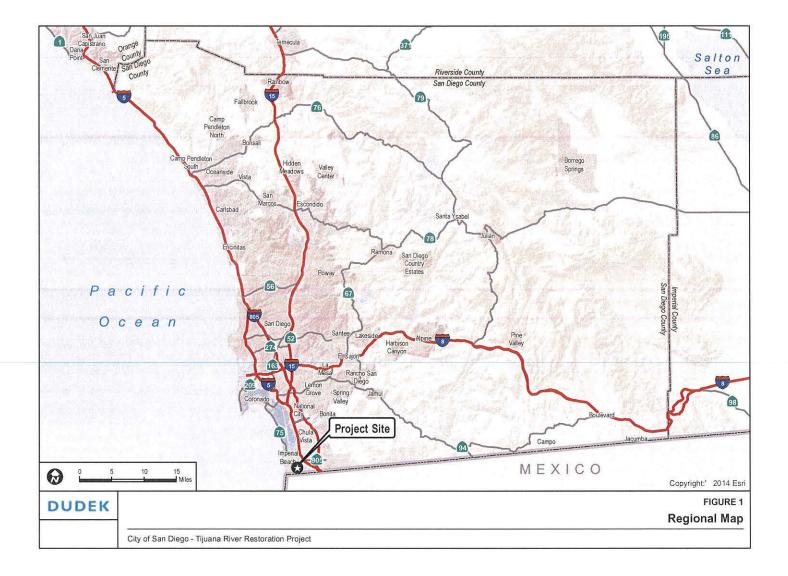
Table 1 summarizes the proposed mitigation value provided by the mitigation project, the proposed allocation for permanent impacts at Smythe Channel, and the remaining mitigation acreage that would be available to other City Essential Public Projects, in accordance with the MFR.

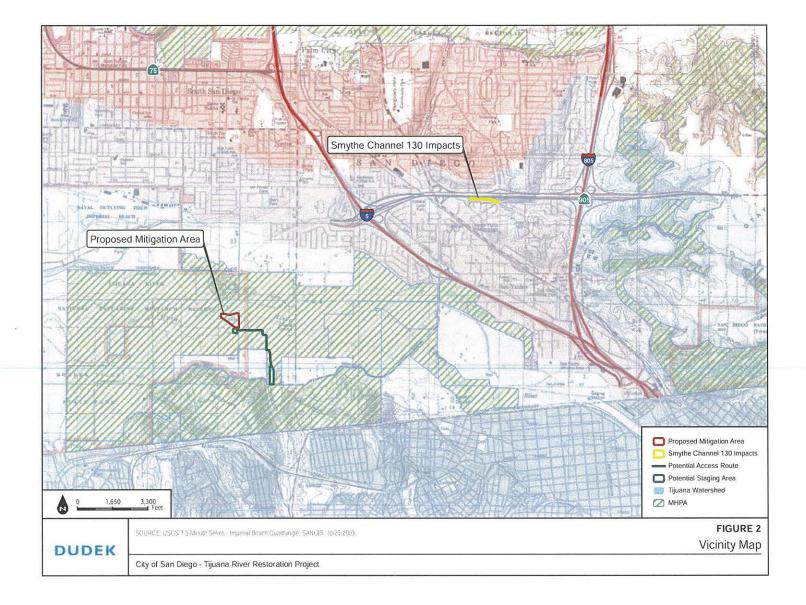
	Rehabilitation	Enhancement
Total Proposed Mitigation Areas	1.40 acres	4.04 acres
Proposed Portion for Smythe Channel	0.59 acre	0.59 acre
Remaining for Additional Projects	0.81 acre	3.45 acres

Table 1Proposed Mitigation Acreage

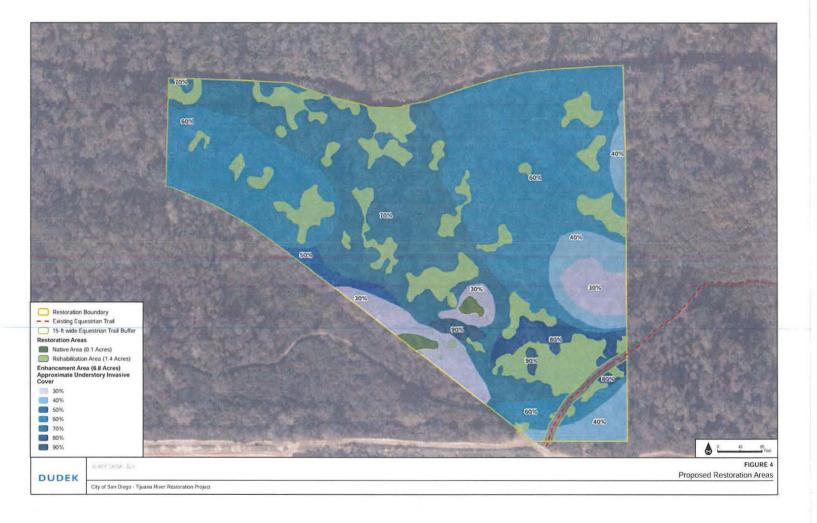
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- ACOE. 2015. Memorandum for the Record. Subject: Advance Permittee-Responsible Mitigation Related to City of San Diego Essential Public Projects within the County of San Diego. October 23.
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ATTACHMENT A

Draft ACOE Mitigation Ratio Setting Checklist

Date: 5/16/16	Corps File No.:	SPL-2015-00942-RAG	Project Manager:	Rose Galer			
Impact Site Name:	Smythe Channel	ORM Resource Type:	River/Stream		Hydrology:	Intermittent	
Impact Cowardin or HGM type:	Riverine	Impact area :	0.59	acres Impact dista	ince:	1,392	linear feet
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	Mitigation Type:	Rehabilitation	Mitigation Type:	Enhancement	Mitigation Type:		
	ORM Resource Type:	River/Stream	ORM Resource Type:	River/Stream	ORM Resource Type:		
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rinai mitigation ratio(s):	Total adjustments (4-8): Final ratio: Proposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**:	4 5.00 : 3.00 0.59 acres 1392 linear feet 0 River/Stream linear feet % 0.98 acres 6960 linear feet River/Stream Intermittent 0.59 acres 830 linear feet	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**:	4 5.00 : 2.00 acres 557 linear feet 0 Riverine Intermittent 0.59 acres 1392.0 acres River/Stream River/Stream Intermittent 0.59 acres linear feet	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0	#DIV/0! acres linear fee acres linear fee acres linear fee
rinai mitigation ratio(s):	Total adjustments (4-8): Final ratio: Proposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated:	4 5.00 : 3.00 0.59 acres 1392 linear feet 0 Riverine Intermitten linear feet 0.98 acres 6960 acres 6962 acres 6963 acres 6964 acres 6965 acres 0.59 acres 830 linear feet 40 % 0.24 acres	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated:	4 5.00 : 2.00 0.24 acres 557 linear feet 0 Riverine Intermittent 0.59 acres 1392.0 acres River/Stream River/Stream Intermittent 0.59 acres 6 6 830 acres linear feet 0.59 acres 10 10 10 10 10 10 10 10 10 10	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0	#DIV/0! acres linear fee linear fee acres linear fee %
rinai mitigation ratio(s):	Total adjustments (4-8): Frinal ratio: Proposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Miti	4 5.00 : 3.00 0.50 acres 1392 Inear feet 0.verine Intermitten t 0.98 River/Stream Intermitten ntermitten 0.98 acres 9600 inear feet 0.99 acres 830 inear feet 40 0.44 acres agtion site provides	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mi	4 5.00 : 2.00 0.24 acres linear feet 0 Riverine Intermittent 0.59 acres 1392.0 linear feet River/Stream Intermittent. 0.59 acres 1392.0 acres linear feet 0 acres 1300 acres 1000 acre	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0	#DIV/0! acres linear fee linear fee acres linear fee %
rinai mitigation ratio(s):	Total adjustments (4-8): Final ratio: Final ratio: Froposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mit substantial functional gains or	4 5.00 : 3.00 0.59 acres 1992 linear feet 0 River/ine Intermiten t 0.98 acres 6960 linear feet River/Stream River/Stream Intermitent 0.59 acres 830 linear feet 40 0,24 acres 102 acres	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mi substantial functional gains c	4 5.00 : 2.00 0.24 acres 557 linear feet 0 Riverine Intermittent 0.59 acres 1392.0 linear feet River/Stream River/Stream Intermittent 0.59 acres 1393.0 linear feet 0.00 acres tigation site provides 0.00 acres tigation site provides	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0	#DIV/0! acres linear fee linear fee acres linear fee %
rinai mitigation ratio(s):	Total adjustments (4-8): Final ratio: Proposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mit substantial functional gains or from maintenance. These or	4 5.00 : 3.00 0.59 acres 1392 linear feet 0 River/ine Intermitten t 0.98 acres 6960 linear feet River/Stream River/Stream River/Stream Intermittent 0.59 acres 830 linear feet 40 % 0.24 acres galion alte provides impared to functional loss	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mi substantial functional gains of from maintenance. These or	4 5.00 : 2.00 0.24 acres 557 linear feet 0 Riverine Intermittent 0.59 acres 1392.0 linear feet River/Stream River/Stream River/Stream Intermittent 0.59 acres 830 linear feet 0 % 0.00 acres tigation site provides compared to functional loss	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0	#DIV/0! acres linear fei acres linear fei acres linear fei %
rinai mitigation ratio(s):	Total adjustments (4-8): Final ratio: Proposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mit substantial functional gains or from maintenance. These ow with the moderate risk/uncert	4 5.00 : 3.00 0.59 acres 1392 linear feet 0 Riverine Intermitten t 0.98 acres 6960 linear feet River/Stream River/Stream Intermittent 0.59 acres 830 linear feet 40 % 0.24 acres gation sate provides Impared to functional loss erail gates are commensurate ainty and miniattemport	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated; Additional PM comments: Mi substantial functional gains of from maintenance. These of with the moderate fis/Kunceet	4 5.00 : 2.00 0.24 acres 1inear feet 0 Riverine Intermittent 0.59 acres 1302.0 linear feet River/Stream River/Stream River/Stream Intermittent 0.59 acres 330 linear feet 0 % 0.00 acres baso linear feet 0 % 0.00 acres sompared to functional loss verall gains are commensurate lanty and minimal temporal	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0	#DIV/0! acres linear fe acres linear fe acres linear fe %
rinai mitigation ratio(s):	Total adjustments (4-8): Final ratio: Proposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mit substantial functional gains oc from maintenance. These ov with the moderate risk/uncert loss of proposed rehabilitation	4 5.00 : 3.00 0.59 acres inear feet 0 River/Stream River/Stream River/Stream River/Stream River/Stream Intermittent 0.59 acres inear feet 40 % 0.24 acres gation site provides oraligation site provides erail gains are commensurate ainty and minimal temporal	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mis substantial functional gains c from maintenance. These or with the moderate risk/uncert loss of proposed enhancement	4 5.00 : 2.00 0.24 acres 557 linear feet 0 Riverine Intermittent 0.59 1392.0 River/Stream Intermittent 0.59 acres linear feet 0.59 acres linear feet 0.59 acres linear feet 0.59 acres linear feet 0 0.00 acres ligation site provides oompared to founctional loss verall gains are commensurate tainty and minimal temporal ant.	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0 0 0	#DIV/0! acres linear fe acres linear fe acres acres
Final compensatory miligation	Total adjustments (4-8): Final ratio: Proposed impact (total): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mit substantial functional gains oc from maintenance. These ov with the moderate risk/uncert loss of proposed rehabilitation	4 5.00 : 3.00 0.59 acres inear feet 0 River/Stream River/Stream River/Stream River/Stream River/Stream Intermittent 0.59 acres inear feet 40 % 0.24 acres gation site provides oraligation site provides erail gains are commensurate ainty and minimal temporal	Total adjustments (4-8): Final ratio: Remaining impact: to Resource type: Cowardin or HGM: Hydrology: Required Mitigation*: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments: Mis substantial functional gains c from maintenance. These or with the moderate risk/uncert loss of proposed enhancement	4 5.00 : 2.00 0.24 acres 557 linear feet 0 Riverine Intermittent 0.59 1392.0 River/Stream Intermittent 0.59 acres linear feet 0.59 acres linear feet 0.59 acres linear feet 0.59 acres linear feet 0 0.00 acres ligation site provides oompared to founctional loss verall gains are commensurate tainty and minimal temporal ant.	Total adjustments (4-8): Final ratio: Remaining impact (acres): Remaining impact (acres): Remaining impact (linear feet): to Resource type: Cowardin or HGM: Hydrology: Required Mitigation: of Resource type: Cowardin or HGM: Hydrology: Proposed Mitigation**: Impact Unmitigated: Additional PM comments:	#DIV/0! 0.00 0 Riverine Intermittent #DIV/0! #DIV/0! 0 0 0	#DIV/0! acres linear fe acres linear fe acres acres

Attachment 12501.6 - SPD Mitigation Ratio Setting Checklist (See 12501-SPD for Revisions Sheet)

"At PMs discrition, if applicant's proposed mitigation is less than checklist requirement and additional mitigation type(s) proposed, complete additional columns as needed. "Only enter proposed mitigation into spreadsheet if accepting applicant's lower (than required ratio) proposal.

Current Approved Version: 10/21/2013. Printed copies are for "Information Only." The controlled version resides on the SPD QMS SharePoint Portal. SPD QMS 12501.6-SPD Regulatory Program – Mitigation Ratio Setting Checklist 1 of 3

Step 2: Qualitative comparison of functions (functional loss vs. gain)

Functions (Column A)	Impact site	Mitigation site		
Short- or long-term surface water storage	mod gain	mod gain		
Subsurface water storage	small loss	small gain		
Moderation of groundwater flow or discharge	no change	no change		
Dissipation of energy	mod loss	mod gain		
Cycling of nutrients	mod loss	mod gain		
Removal of elements and compounds	small gain	mod gain		
Retention of particulates	small loss	mod gain		
Export of organic carbon	small loss	large gain		
Maintenance of plant and animal communities	small loss	large gain		

Function (Column B)	Impact site	Mitigation site
Short- or long-term surface water storage	mod gain	small gain
Subsurface water storage	small loss	small gain
Moderation of groundwater flow or discharge	no change	no change
Dissipation of energy	mod loss	small gain
Cycling of nutrients	mod loss	small gain
Removal of elements and compounds	small gain	small gain
Retention of particulates	small loss	small gain
Export of organic carbon	small loss	small gain
Maintenance of plant and animal communities	small loss	mod gain

Function (Column C)	Impact site	Mitigation site
Short- or long-term surface water storage		
Subsurface water storage		
Moderation of groundwater flow or discharge		
Dissipation of energy		
Cycling of nutrients		
Removal of elements and compounds		
Retention of particulates		
Export of organic carbon		

Adjustment: -3

PM Justification: Impact site has an overall small loss of function due to removal of vegetation from an urban area where it does not support diverse or sensitive species. Impact site actually has some functional gains due to the removal of contaminated sediments and improved flow dynamics. Rehabilitation areas provide substantial gains in a variety of functions, including connectivity to surrounding habitat, nonurban landscape context, and adjacency to existing mitigation sites.

Adjustment: -1

PM Justification: Impact site has an overall small loss of function due to removal of vegetation from an urban area where it does not support diverse or sensitive species. Impact site actually has some functional gains due to the removal of contaminated sediments and improved flow dynamics. Enhancement areas have small to moderate gains in a variety of functions, including connectivity to surrounding habitat, non urban landscape context, and adjacency to existing mitigation sites.

DM In	stificati		Constant of the		Sec. 22	241815
PIN JUS	suncau	on:				
all.						
C. C. Start						
Car and						

of plant and animal communities

Instructions:

Describe amount of functional loss (impact) and gain (mitigation) in each respective column. Gain and loss can be
 Note: alternate lists of functions may be used.
 Note: a single adjustment should be used to account for all functions combined (see example 7 in attachment 12501.3)

ATTACHMENT B

Wetland Data Determination Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Tijuana River Mitigation Site	City/County:San Diego Sampling Date:05/					
Applicant/Owner:				State:CA Sampling Point:DS1		
Investigator(s): Jake Marcon		Section, To	ownship, Ra	nge:	6 ••••••••••••••••••••••••••••••••••••	
Landform (hillslope, terrace, etc.): Riparian floodplain		Local relie	ef (concave,	convex, none): None	Slope (%):	
Subregion (LRR):C - Mediterranean California	Lat:32 3	33.075' N		Long:117 5.600' W	Datum:	
Soil Map Unit Name: Chino silt loam, saline, 0 to 2 perce	nt slope	S		NWI classifi	cation:	
Are climatic / hydrologic conditions on the site typical for this t	time of ye	ar? Yes	No C	(If no, explain in F	(emarks.)	
Are Vegetation Soil or Hydrology sig	inificantly	disturbed?	Are '	"Normal Circumstances"	present? Yes (No (
	turally pro	oblematic?		eeded, explain any answe		
SUMMARY OF FINDINGS - Attach site map sh	nowing	samplin				
Hydrophytic Vegetation Present? Yes 🕥 No	6					
Hydric Soil Present? Yes (No	200	ls t	he Samplec	Area		
Wetland Hydrology Present? Yes (No	(with	hin a Wetlaı	nd? Yes (e	No C	
Remarks: Hydrophytic vegetation is assumed because of weedy Ricinus communis	the curr	ent condit	ion is signi	ficantly disturbed. Fai	led vegetation index because	
VEGETATION						
No. 1997	bsolute % Cover	Dominant Species?		Dominance Test work		
1.Salix goodingii	60	Yes	FACW	Number of Dominant S That Are OBL, FACW,		
2.Myoporum laetum	15		FACU	Total Number of Domir		
3.Ricinus communis	5		FACU	Species Across All Stra		
4.				Percent of Dominant S	nocios	
Total Cover: Sapling/Shrub Stratum	80 %			That Are OBL, FACW,		
1-Ricinus communis	70	Yes	FACU	Prevalence Index wor	rksheet:	
2.	70	105		Total % Cover of:	Multiply by:	
3.			1 <u>000000000000000000000000000000000000</u>	OBL species	x 1 = 0	
4.				FACW species	60 x 2 = 120	
5.				FAC species	2 × 3 = 6	
Total Cover:	70 %			FACU species	105 × 4 = 420	
Herb Stratum		C.F. 31		UPL species	15 × 5 = 75	
1. Tropaeolum majus	15		UPL	Column Totals: 1	(A) 621 (B)	
² ·Ricinus communis	15	Yes	FACU	Prevalence Index	x = B/A = 3.41	
3. Sonchus asper 4.	2		FAC	Hydrophytic Vegetati	1, 21.11	
5.				Dominance Test is		
6.			<u></u>	Prevalence Index	is ≤3.0 ¹	
7.				Morphological Ada	aptations ¹ (Provide supporting	
8.					s or on a separate sheet)	
Total Cover:	32 %			- Problematic Hydro	ophytic Vegetation ¹ (Explain)	
Woody Vine Stratum				Indicators of hydric of	oil and wetland hydrology must	
1				be present.	ni and wettand nydrology must	
2 Total Cover:	%			Hydrophytic		
% Bare Ground in Herb Stratum % % Cover c		Crust	%	Vegetation	es (No (e	
	of Biotic C			Vegetation Present? Ye	!s (` No (●	

SOIL

Sampling Point: DS1

Profile Des	cription: (Describe	to the dep	th neede	d to docum	ent the indic	ator or col	nfirm (the absence of indicators.)
Depth	Matrix				Features			
(inches)	Color (moist)	%	Color	(moist)	<u>%</u> Ty	pe ¹ Loo		Texture ³ Remarks
1-5	10YR 3/2						C	Clay Loam
6-20	10YR 3/1	80					C	Clay Loam
	10YR 3/2	20					<u> </u>	Clay Loam
	•	-)()()()()()()()()()()						
/ <u></u>								
¹ Type: C=C	Concentration, D=Dep	letion RM	-Reduced	d Matrix	² Location: PL :	=Pore Linin	ng RC	C=Root Channel, M=Matrix.
	and a second sec							n, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.
Hydric Soil	Indicators: (Applicab	le to all LR	Rs, unles	s otherwise	noted.)			Indicators for Problematic Hydric Soils ⁴ :
Histoso				Sandy Redox				1 cm Muck (A9) (LRR C)
	pipedon (A2)		100000	Stripped Ma				2 cm Muck (A10) (LRR B)
	listic (A3) en Sulfide (A4)			and the second second second	ky Mineral (F1 ed Matrix (F2)	*>		Reduced Vertic (F18) Red Parent Material (TF2)
	ed Layers (A5) (LRR	C)		Depleted Ma				Other (Explain in Remarks)
Control Inc.	uck (A9) (LRR D)	0)			Surface (F6)			
572.13	d Below Dark Surfac	e (A11)	in some some		rk Surface (F	7)		
Thick D	ark Surface (A12)	, , , , ,		Redox Depr	essions (F8)	2		
Sandy	Mucky Mineral (S1)			Vernal Pools	s (F9)			⁴ Indicators of hydrophytic vegetation and
	Gleyed Matrix (S4)							wetland hydrology must be present.
	Layer (if present):							
Type:								
Depth (ir								Hydric Soil Present? Yes 💿 No 🤇
Remarks: S	oil wet from recen	t precipita	tion					
HYDROLO	OGY							
	drology Indicators							Secondary Indicators (2 or more required)
	icators (any one indic		cient)					Water Marks (B1) (Riverine)
		ator 15 Sum		Salt Cruct	(D11)			
	e Water (A1) 'ater Table (A2)		님	Salt Crust Biotic Crus	Contrary and a			Sediment Deposits (B2) (Riverine)
	ion (A3)		님		ertebrates (B	13)		X Drift Deposits (B3) (Riverine) X Drainage Patterns (B10)
	Marks (B1) (Nonrive i	(and	님		Sulfide Odor (1			Dry-Season Water Table (C2)
	ent Deposits (B2) (No		님		hizospheres a		Root	
	eposits (B3) (Nonrive		님		of Reduced Irc		911001	Crayfish Burrows (C8)
	e Soil Cracks (B6)		님		n Reduction in		oils (C	
	tion Visible on Aerial	Imagery (B	7) 💾		lain in Remarl			Shallow Aquitard (D3)
	Stained Leaves (B9)							FAC-Neutral Test (D5)
Field Obse	2 3			enade - Estárte a Arabia		1		
Surface Wa	iter Present?	es C	No (Depth (ind	ches):			
Water Table	e Present?		No (Depth (ind	ches):			
Saturation F	2007-01-02-01-02-02-02-02-02-02-02-02-02-02-02-02-02-		No (Depth (ind	ches):			
(includes ca	apillary fringe)	25%	575					and Hydrology Present? Yes 💿 No 🤇
Describe Re	ecorded Data (stream	n gauge, mo	onitoring	well, aerial p	photos, previou	us inspectio	ons), if	t available:
Remarks: _W	rack present, wate	r marks or	Ricinus	s commun	s trunks, soi	l surface	very v	wet
US Army Corr	os of Engineers							

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Tijuana River Mitigation Site	City/Count	y:San Dieg	<u>5</u> 0	Sampling Date:05/10/2016			
Applicant/Owner:				State:CA	Sampling Point:DS2		
Investigator(s):		Section, To	ownship, Ra	ange:			ncouver or nice
Landform (hillslope, terrace, etc.): Riparian floodplain		Local relie	f (concave,	convex, none): None	-	Slope (%):	
Subregion (LRR):C - Mediterranean California	Lat: 32	33.098' N		Long: 117 5.603' W		 Datum:	
Soil Map Unit Name: Chino silt loam, saline, 0 to 2 perce				NWI classific	ation:		
Are climatic / hydrologic conditions on the site typical for this t			No ((If no, explain in R	emarks.)		
		disturbed?	2	"Normal Circumstances"	25.07		C
		oblematic?		eeded, explain any answe		1 (1 .1.1)	, v
SUMMARY OF FINDINGS - Attach site map sh			×.				, etc.
	~	in the second second					
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No							
Hydric Soil Present? Yes (No Wetland Hydrology Present? Yes (No			he Sampleo				
Remarks:	(=)	With	hin a Wetla	nd? Yes (e	No (
VEGETATION			890			×	
	bsolute 6 Cover	Dominant Species?	Indicator Status	Dominance Test work			
1.Salix lasiolepis	30	Yes	FACW	Number of Dominant S That Are OBL, FACW,	pecies or FAC:	2	(A)
2.Salix goodingii	15		FACW	-	1	-	X de
3. Tropaeolum majus	2		FAC	Total Number of Dominant Species Across All Strata:		3	(B)
4.				- Doroopt of Dominant St	, Angles		A. 1994.
Total Cover:	47 %			 Percent of Dominant Sp That Are OBL, FACW, 		66.7 %	(A/B)
Sapling/Shrub Stratum	10	V.	11.1 M 21. M	Prevalence Index wor	kabaati	Covedan	
1.Salix lasiolepis 2.Ricinus communis	40	Yes	FACW	Total % Cover of:		ultiply by:	
3.Tropaeolum majus	5		FACU	OBL species	x 1 =	0	Č.
4.	3		UPL	- 100 m 1 m	35 x 2 =	170	
5.			-	FAC species	2 x 3 =	6	
Total Cover:	80 %				50 x 4 =	240	
Herb Stratum	00 10			1.0	75 × 5 =	375	
1. Tropaeolum majus	70	Yes	UPL		22 (A)	791	(B)
² .Ricinus communis	25		FACU			2 Detailed	
3.				Prevalence Index		3.56	
4.				 Hydrophytic Vegetation X Dominance Test is 		:	
5				Prevalence Index i			
6				Morphological Ada		vide support	ina
-7				- data in Remark			шЯ
8. Total Cover:	0.7		25	- Problematic Hydro	phytic Vegeta	tion ¹ (Explair	n)
Woody Vine Stratum	95 %			1.000			
1	e.	-	<u></u>	¹ Indicators of hydric so be present.	il and wetlan	d hydrology	must
2							
Total Cover:	%			Hydrophytic Vegetation			
% Bare Ground in Herb Stratum% % Cover o	f Biotic C	Crust	%		s 💿 🛛 N	° (
Remarks: Salix goodingii snag within plot (not count	ed)			22			

SOIL

Sampling Point: DS2

Profile Des	scription: (Describe t	to the depth nee	ded to docu	ment the i	ndicator o	or confiri	m the absence of	indicators.)		
Depth	Matrix			x Features				2		
(inches)	Color (moist)		or (moist)	%	Type ¹	_Loc ² _	Texture ³	Remarks		
	10YR 3/2	70					Silty Clay	fina main aire		
	10YR 2/1	30		-			Silty Clay	fine grain size		
4-23	10YR 4/2						Clay	Service and the service se		
	10YR 2/1						Clay	fine grain size		
		5-00.000 million - 1000 million - 10								
¹ Type: C=0	Concentration, D=Depl	etion, RM=Redu	ced Matrix.	² Location	: PL=Pore	Lining, F	RC=Root Channel,	M=Matrix.		
					ndy Loam,	, Clay Loa		m, Silt Loam, Silt, Loamy Sand, Sand.		
and the second se	Indicators: (Applicable	e to all LRRs, un						Problematic Hydric Soils:		
Histose	Epipedon (A2)		Sandy Redo Stripped M	102 12				ck (A9) (LRR C) ck (A10) (LRR B)		
	Histic (A3)		Loamy Mu		I (F1)		Laurence .	Vertic (F18)		
a second s	gen Sulfide (A4)		Loamy Gle		A		and the second s	ent Material (TF2)		
Stratifi	ed Layers (A5) (LRR C	;) 🗡	Depleted N	latrix (F3)			Other (E:	xplain in Remarks)		
	1uck (A9) (LRR D)		Redox Dar							
	ed Below Dark Surface	e (A11)	Depleted D		ALCO A					
the second se	Dark Surface (A12) Mucky Mineral (S1)	l l l l l l l l l l l l l l l l l l l	Redox Dep Vernal Poc		-8)		⁴ Indicators of	hydrophytic vegetation and		
	Gleyed Matrix (S4)			13 (1 5)				ydrology must be present.		
Lund	Layer (if present):	i na se indirector de la constante de la const				- cite allow	1			
Type:										
Depth (i	nches):						Hydric Soil P	resent? Yes (No 🤇		
Remarks: §	Soil wet, top layer ve	ery smooth pot	entially due	to wetne	ss (almos	st greasy	/)			
HYDROL										
							Canada			
	ydrology Indicators:							ary Indicators (2 or more required) ter Marks (B1) (Riverine)		
	licators (any one indica	ator is sumcient)								
	e Water (A1)	l	Salt Crus Biotic Cru	CONTRACTOR CONTRACTOR			Sediment Deposits (B2) (Riverine)			
	/ater Table (A2) tion (A3)	l		ivertebrate	e (B13)			inage Patterns (B10)		
	Marks (B1) (Nonriveri	ne) [time and the second second	Sulfide O			himan	-Season Water Table (C2)		
l luna	ent Deposits (B2) (Nor	and a second	· · · · · · · · · · · · · · · · ·	Rhizosphe		Livina Ro	ف استنبا	n Muck Surface (C7)		
	eposits (B3) (Nonriver	S 10 8 8		of Reduce	- 100 a 10 ¹⁰ a		ليتسا ذ	yfish Burrows (C8)		
	e Soil Cracks (B6)	ĺ	Recent In	on Reducti	on in Plow	ed Soils	(C6) 🗍 Sat	uration Visible on Aerial Imagery (C9)		
Inunda	tion Visible on Aerial I	magery (B7)	Other (Ex	plain in Re	emarks)		Sha	allow Aquitard (D3)		
Water-	Stained Leaves (B9)						FAC	C-Neutral Test (D5)		
Field Obse	ervations:									
Surface Wa	ater Present? Ye	es 🌔 No 🔎	Depth (ir	nches):						
Water Tabl	e Present? Yo	es 🌔 No 🔎	Depth (ir	nches):						
Saturation	a selferation de la	es 🌔 No 🔎	Depth (ir	nches):		- Wei	tland Hydrology I	Present? Yes 🜘 No 🤇		
	apillary fringe) ecorded Data (stream	gauge, monitorir	ng well, aerial	photos, pr	evious ins					
	1,75	28. 15. 17.	085	1997 - 199 2						
Remarks:T	rash within wrack,	FAC neutral =	3:3							

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Tijuana River Mitigation Site	C	ity/County:San Dieg	go	Sampling Date:05/10/2016	
Applicant/Owner:			State:CA	Sampling Point:DS3	
nvestigator(s):	S	ection, Township, R	ange:		
andform (hillslope, terrace, etc.): Riparian floodp	plain L	ocal relief (concave,	convex, none): None	Slope (%):	
Subregion (LRR):C - Mediterranean California	Lat: 32 33	3.122' N	Long: 117 5.580' W	Datum:	
Soil Map Unit Name: Tujunga sand, 0 to 5 percer	nt slope		NWI classific	ation:	
Are climatic / hydrologic conditions on the site typica		? Yes 💽 No ((If no, explain in R	emarks.)	
Are Vegetation Soil or Hydrology] significantly di		"Normal Circumstances"		
Are Vegetation Soil or Hydrology	naturally prob		needed, explain any answe		
	1 .,			Converting and the set of the set of the set	
SUMMARY OF FINDINGS - Attach site	map showing s			, important leatures, etc.	
Hydrophytic Vegetation Present? Yes (No 🏈				
Hydric Soil Present? Yes (No (Is the Sample	d Area		
Wetland Hydrology Present? Yes (Remarks:	No 🍘	within a Wetla	and? Yes (No C	
VEGETATION					
	Absolute D	Dominant Indicator	Dominance Test work	sheet:	
Tree Stratum (Use scientific names.)	% Cover 5	Species? Status	Number of Dominant S		
1.Tamarix ramosissima		es FAC	That Are OBL, FACW,	or FAC: 2 (A)	
2.Salix goodingii	10	FACW	_ Total Number of Domir	iant	
3.Salix laevegata	5	FACW	_ Species Across All Stra	ata: 3 (B)	
4.Arundo donax	5	FACW	Percent of Dominant S		
Sapling/Shrub Stratum	tal Cover: 35 %		That Are OBL, FACW,	or FAC: 66.7 % (A/B)	
1. Tamarix ramosissima	30 Y	es fac	Prevalence Index wor	ksheet:	
2.Arundo donax	20	FACW	Total % Cover of:	Multiply by:	
3. Baccharis salicifolia	20	FAC	OBL species	x 1 = 0	
4				40 x 2 = 80	
5			-	72 × 3 = 216	
Herb Stratum Tot	al Cover: 70 %		FACU species	x 4 = 0	
¹ .Phacelia cicutaria	15 Y	es Not Listed		$15 \times 5 = 75$ 27 (A) 371 (B)	
2. Baccharis salicifolia		FAC	_ Column Totals: 1	27 (A) 371 (B)	
3. Tamarix ramosissima		FAC	Prevalence Index	a = B/A = 2.92	
4.			Hydrophytic Vegetati	on Indicators:	
5.			X Dominance Test is		
6.			X Prevalence Index i		
7.				ptations ¹ (Provide supporting s or on a separate sheet)	
8.				phytic Vegetation ¹ (Explain)	
Tot Woody Vine Stratum	al Cover: 22 %			phylio vogoladon (Explain)	
1.			¹ Indicators of hydric so	oil and wetland hydrology must	
2.			be present.		
No	al Cover: %		Hydrophytic		
	% Cover of Biotic Cru	iet 0/	Vegetation Present? Ye	es (No (
	70 GOVER OF DIDUIC CRU	ust			
Remarks: Large amount of thatch					

SOIL

Sampling Point: DS3

Profile Des	scription: (Describe	to the depth r	needed to docu	ment the in	dicator o	r confirm	the absence of indicators.)			
Depth Matrix			Redox Features		1 2	T-utura ³ Demadu				
(inches)	Color (moist)	accerted	Color (moist)		Type ¹	Loc ²	Texture ³ Remarks	·		
1-4	10YR 4/2	100					Sandy Clay Loam			
4-7	<u>10YR 5/4</u>	100					Loamy Sand			
7-20	10YR 7/3	100					Loamy Sand			
		-								
		•								
¹ Type: C=0	Concentration, D=Dep	letion, RM=Re	duced Matrix.	² Location:	PL=Pore	Lining, R	C=Root Channel, M=Matrix.			
³ Soil Textu	res: Clay, Silty Clay, S	Sandy Clay, Lo	am, Sandy Clay	Loam, San	dy Loam,	Clay Loa	m, Silty Clay Loam, Silt Loam, Silt, Loamy	Sand, Sand.		
and the second second	Indicators: (Applicab	le to all LRRs,	unless otherwis	e noted.)			Indicators for Problematic Hydric Soils			
			Sandy Redo	S 4			1 cm Muck (A9) (LRR C)			
1000 CO.	Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1)				2 cm Muck (A10) (LRR B) Reduced Vertic (F18)					
1	gen Sulfide (A4)		Contraction of Street	yed Matrix (Acres 1		Red Parent Material (TF2)			
Stratified Layers (A5) (LRR C)						Other (Explain in Remarks)				
	luck (A9) (LRR D)		Construction of the second sec	k Surface (F	0.000		Laurent 2			
	ed Below Dark Surfac	e (A11)		ark Surface	- C - C -					
Thick Dark Surface (A12) Redox Depressions (F8)						⁴ Indicators of hydrophytic vegetation ar	ad			
Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Gleyed Matrix (S4)						wetland hydrology must be present.				
Land	E Layer (if present):		na an t-calmana an anna a				1	2		
Type:										
Depth (i	inches):						Hydric Soil Present? Yes (NoC		
Remarks:					and the second	inner sola in		and the second secon		
	002									
HYDROL										
1.201 CT	ydrology Indicators:		-1)				Secondary Indicators (2 or more required)			
	dicators (any one indic	ator is sufficier	1	(044)			Water Marks (B1) (Riverine)			
	e Water (A1)		Salt Crus				Sediment Deposits (B2) (Riverine)			
High Water Table (A2) Biotic Crust (B12)						Drift Deposits (B3) (Riverine) Drainage Patterns (B10))			
Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)						Dry-Season Water Table (C2)			
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Livin					ivina Roc		/			
Drift Deposits (B3) (Nonriverine)					-	Crayfish Burrows (C8)				
Surfac	e Soil Cracks (B6)	0	Recent In	on Reductio	n in Plow	ed Soils (C6) Saturation Visible on Aerial Ir	magery (C9)		
Inundation Visible on Aerial Imagery (B7) TOther (Explain in Remarks)					Shallow Aquitard (D3)					
Water-	-Stained Leaves (B9)						FAC-Neutral Test (D5)			
Field Obse	ervations:									
Contraction and and	-L D	'es C No	Opth (ir	nches):						
Surface Wa	ater Present? Y	1 marii 1 mari		choc):						
1000 - 10000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1		/es C No	 Depth (ir 	iches).						
Water Tabl	le Present? Y Present? Y			021) 			and Hydrology Present? Yes 🍙	No C		
Water Tabl Saturation (includes c	le Present? Y	res C No res C No	Depth (ir	iches):	vious ins		and Hydrology Present? Yes (No (
Water Tabl Saturation (includes c	le Present? Y Present? Y apillary fringe)	res C No res C No	Depth (ir	iches):	vious ins			No (
Water Tabl Saturation (includes c Describe R	le Present? Y Present? Y apillary fringe) Recorded Data (stream	res C No res C No	Depth (ir	iches):	vious insp			No (
Water Tabl Saturation (includes c Describe R	le Present? Y Present? Y apillary fringe)	res C No res C No	Depth (ir	iches):	vious insp			No (
Water Tabl Saturation (includes c Describe R	le Present? Y Present? Y apillary fringe) Recorded Data (stream	res C No res C No	Depth (ir	iches):	vious ins			No (
Water Tabl Saturation (includes c Describe R	le Present? Y Present? Y apillary fringe) Recorded Data (stream	res C No res C No	Depth (ir	iches):	vious ins			No (